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<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing)	Application Number	10/077,148
	Filing Date	February 15, 2002
	First Named Inventor	Michael J. Sullivan
	Art Unit	3711
	Examiner Name	R. Gordon
	Attorney Docket Number	P-5474-D1-C1-C1
Total Number of Pages in This Submission		13

ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance communication to Technology Center (TC) <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Michelle Bugbee
Signature	<i>Michelle Bugbee</i>
Date	August 20, 2004

CERTIFICATE OF TRANSMISSION/MAILING	
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Date	August 20, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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AUG 20 2004

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## FEE TRANSMITTAL

### for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT

(\$ 330.00)

## Complete if Known

Application Number	10/077,148
Filing Date	February 15, 2002
First Named Inventor	Michael J. Sullivan
Examiner Name	R. Gorden
Art Unit	3711
Attorney Docket No.	P-5474-D1-C1-C1

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit  
Account  
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Name

17-0150

Top-Flite Golf Company

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 770	2001 385	Utility filing fee	
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1) (\$ 0			

## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20** =	X	
Multiple Dependent	-3** =	X	

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 86	2201 43	Independent claims in excess of 3
1203 280	2203 145	Multiple dependent claim, if not paid
1204 86	2204 43	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2)

(\$ 0

\*\*or number previously paid, if greater. For Reissues, see above

## FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing a brief in support of an appeal	330.00
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to Institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1808 180	1808 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 330.00

## SUBMITTED BY

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Date

August 20, 2004

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.

**OFFICIAL**

Docket No. P-5474-D1-C1-C1

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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**AUG 20 2004**

In re patent application of Michael J. Sullivan et al.

Serial No.: 10/077,148

Examiner: R. Gorden

Filing Date: February 15, 2002

Group Art Unit: 3711

For: **GOLF BALL WITH SOFT CORE**

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Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**APPEAL BRIEF UNDER 37 C.F.R. § 1.192**

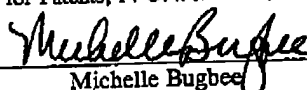
This Appeal Brief is in furtherance of the Notice of Appeal that was filed for the above-referenced application on July 15, 2004.

The fees required under § 1.17, and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying Fee Transmittal.

Appellant files herewith an Appeal Brief in connection with the above-identified application, wherein claims 38 to 42, 44 to 49 and 51 to 57 were finally rejected in the Office Action of April 20, 2004. What follows is Appellant's Appeal Brief in accordance with 37 C.F.R. § 1.192(a).

**CERTIFICATION UNDER 37 C.F.R. 1.8**

I hereby certify that this Appeal Brief and the documents referred to as attached therein are being transmitted by facsimile on this date August 20, 2004, to TC3700 at 703-872-9306 addressed to: Attention: Board of Patent Appeals and Interferences, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

  
Michelle Bugbee

10/077,148

P-5474-D1-C1-C1

**I. REAL PARTY IN INTEREST (37 C.F.R. § 1.192(c)(1))**

The real parties in interest in this appeal are the inventors named in the caption of this brief (Michael J. Sullivan et al.) and the assignee, Callaway Golf Company.

**II. RELATED APPEALS AND INTERFERENCES (37 C.F.R. § 1.192(c)(2))**

Currently, it is believed that there are no other appeals or interferences in process or pending before the U.S. Patent and Trademark Office from which the present application bases its priority, or any case which bases its priority upon the present application, that will directly affect or be affected by or have a bearing on the Board's decision in this Appeal.

**III. STATUS OF CLAIMS (37 C.F.R. § 1.192(c)(3))**

The status of claims set forth after the Final Office Action mailed April 20, 2004 and the Advisory Action mailed July 14, 2004 was, and is, as follows:

Allowed claims: none

Rejected claims: 38 to 42, 44 to 49 and 51 to 57

The present appeal is directed specifically to claims 38 to 42, 44 to 49 and 51 to 57.

**IV. STATUS OF AMENDMENTS (37 C.F.R. § 1.192(c)(4))**

In the Final Office Action of April 20, 2004, claims 38 to 42, 44 to 49 and 51 to 57 were rejected under 35 U.S.C. § 102(e) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Yamagishi et al. (5,779,563).

There are no unentered amendments.

**V. SUMMARY OF THE INVENTION (37 C.F.R. § 1.192(c)(5))**

The present invention is directed to a golf ball comprising: a solid core, wherein the core has a PGA compression of 55 or less; a cover comprising an inner cover layer and an outer cover layer, wherein the inner cover layer comprises an ionomer resin and the outer cover layer comprises a polyurethane and wherein outer cover layer has a Shore D hardness of about 58 or more; the

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ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780 (claim 38). The present invention is also directed to a golf ball comprising: a solid polybutadiene core, wherein the core has a PGA compression of 55 or less; an outer polyurethane cover layer having a Shore D hardness of about 58 or more; the ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780 (claim 47). The present invention is also directed to a golf ball comprising: a solid polybutadiene core, wherein the core has a PGA compression of 55 or less; a cover comprising an inner cover layer and an outer cover layer, wherein the inner cover layer comprises an ionomer resin and the outer cover layer comprises a polyurethane and wherein outer cover layer has a Shore D hardness of about 58 or more; the ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780 (claim 53).

**VI. ISSUES (37 C.F.R. § 1.192(c)(6))**

Whether claims 38 to 42, 44 to 49 and 51 to 57 are anticipated under 35 U.S.C. § 102(e) by, or in the alternative, obvious under 35 U.S.C. § 103(a) over Yamagishi et al. (5,779,563).

**VII. GROUPING OF CLAIMS (37 C.F.R. § 1.192(c)(7))**

Claims 38 to 42, 44 to 49 and 51 to 57 are pending, and are grouped as follows:

Claim 38 claims a golf ball comprising: a solid core, wherein the core has a PGA compression of 55 or less; a cover comprising an inner cover layer and an outer cover layer, wherein the inner cover layer comprises an ionomer resin and the outer cover layer comprises a polyurethane and wherein outer cover layer has a Shore D hardness of about 58 or more; the ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780. Claims 39 to 42 and 44 to 46 depend from claim 38 and claim additional limitations. Claims 38 to 42 and 44 to 46 stand or fall together.

Claim 47 claims a golf ball comprising: a solid polybutadiene core, wherein the core has a PGA compression of 55 or less; an outer polyurethane

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cover layer having a Shore D hardness of about 58 or more; the ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780. Claims 48, 49, 51 and 52 depend from claim 47 and claim additional limitations. Claims 47 to 49, 51 and 52 stand or fall together.

Claim 53 claims a golf ball comprising: a solid polybutadiene core, wherein the core has a PGA compression of 55 or less; a cover comprising an inner cover layer and an outer cover layer, wherein the inner cover layer comprises an ionomer resin and the outer cover layer comprises a polyurethane and wherein outer cover layer has a Shore D hardness of about 58 or more; the ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780. Claims 54 to 57 depend from claim 53 and claim additional limitations. Claims 53 to 57 stand or fall together.

#### **VIII. ARGUMENTS (37 C.F.R. § 1.192(c)(8))**

The Examiner's rejection of claims 38 to 42, 44 to 49 and 51 to 57 as anticipated under 35 U.S.C. § 102(e) by, or in the alternative, obvious under 35 U.S.C. § 103(a) over Yamagishi et al. (5,779,563) is erroneous and must be reversed.

The Examiner has rejected claims 38 to 42, 44 to 49 and 51 to 57 as being anticipated under 35 U.S.C. § 102(e) by, or in the alternative, obvious under 35 U.S.C. § 103(a) over Yamagishi et al. (5,779,563). The basis for the Examiner's rejection is as follows:

Claims 38-42, 44-49 and 51-57 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under U.S.C. 103(a) as obvious over Yamagishi et al (5,779,563). Regarding claim 38, Yamagishi discloses a golf ball comprising a solid core, an inner cover layer and an outer cover layer (abstract). The inner cover layer is made from Himilan, a well-known trade name for ionomer resins (table 4, col 9). The outer cover layer is made from polyurethane and has a Shore D hardness from 40 to 68 (col 4, lines 5-16; table 2). With respect to the core PGA compression, applicant discloses the conversion of deformation to PGA compression (spec pages 19-20). The PGA scale is from 0 to 200. For every one thousandth of an inch (0.001) a ball deflects one point is deducted from 200.

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Yamagishi discloses a core deflection from 2 to 5 mm or 0.079 to 0.197 inch, which converts to a core PGA compression from 3 to 121. Regarding claim 40, Yamagishi discloses the ball has a diameter of 42.7 mm or 1.68 inches (table 4). Regarding claim 42, the outer cover layer has a Shore D hardness of 40 to 68 (col 4, line 7). Regarding claims 44 and 45, the outer cover layer has a thickness of 0.3 to 2.5 mm or 0.01 to 0.098 inch (col 4, lines 35-37). Regarding claim 47, the solid core is made from a polybutadiene (col 3, lines 2-7). The outer cover layer is made from polyurethane and has a Shore D hardness of 40 to 68 (col 4, lines 5-16). With respect to the core PGA compressions, applicant discloses the conversion of deformation to PGA compression (spec pages 19-20). The PGA scale is from 0 to 200. For every one thousandth of an inch (0.001) a ball deflects one point is deducted from 200. Yamagishi discloses a core deflection from 2 to 5 mm or 0.079 to 0.197 inch, which converts to a core PGA compression from 3 to 121. Regarding claims 51 and 52, the Examiner stated that the outer cover layer has a thickness of 0.3 to 2.5 mm or 0.01 to 0.098 inch (col 4, lines 35-37). Regarding claim 53, the solid core is made from a polybutadiene (col 3, lines 2-7). The inner cover layer is made from Himilan, a well-known trade name for ionomer resins (table 4, col 9). The outer cover layer is made from polyurethane and has a Shore D hardness from 40 to 68 (col 4, lines 5-16). With respect to core PGA compression, applicant discloses the conversion of deformation to PGA compression (spec pages 19-20). The PGA scale is from 0 to 200. For every one thousandth of an inch (0.001) a ball deflects one point is deducted from 200. Yamagishi discloses a core deflection from 2 to 5 mm or 0.079 to 0.197 inch, which converts to a core PGA compression from 3 to 121. Regarding claim 55, the ball has a diameter of 42.7 mm or 1.68 inches (table 4). Regarding claims 38, 39, 41, 48, 54 and 56 applicant claims PGA ball compression and coefficient of restitution, the properties will be overlap the properties of Yamagishi. Yamagishi discloses a solid golf ball comprising a polybutadiene core, an ionomeric inner cover and a polyurethane outer cover. Applicant claims the same materials disclosed by Yamagishi for each layer. Furthermore, although Yamagishi is silent to the properties one skilled in the golf ball art is aware that nearly all golf balls have a PGA compression between 70 and 100. Golf balls outside this range are usually discarded. Golf balls with a very low PGA compression are too soft for use and golf ball with a very high PGA compression are too hard. The coefficient of restitution (COR) also has a common range in the golfing art between 0.7 and 0.8. Golf balls do not have low COR

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values because the collision between the ball and club would not be satisfactory and would not give the ball proper initial velocity. In regards to claims 46, 49 and 57, Yamagishi discloses applicant's invention therefore the performance features such as mechanical impedance will also be the same as applicant's. One of ordinary skill in the art would have modified Yamagishi to achieve the optimal initial velocity and spin of the golf ball.

(See Office Action of April 20, 2004 pp. 2-4.)

**A. The Examiner's Cited Reference**

U.S. Patent No. 5,779,563 to Yamagishi discloses a golf ball with a multi-layer cover, wherein the outer cover layer has a higher specific gravity than the core and inner cover layer, and the ball has an inertia moment within a certain range.

**B. The Subject Matter of Claims 38 to 42, 44 to 49 and 51 to 57 are Patentably Distinguishable Over the Cited Art**

Claims 38 to 42, 44 to 49 and 51 to 57 are not anticipated by, or obvious over Yamagishi et al.

Appellant respectfully disagrees with the Examiner and submits that Yamagishi neither anticipates nor renders obvious Appellant's invention. Independent claims 38, 47 and 53 each claim a golf ball with a core having a PGA compression of 55 or less. The golf ball has a PGA compression of 80 or less. Appellant respectfully submits that Yamagishi et al. does not disclose a golf ball with a core having a PGA compression of 55 or less or where the golf ball has a PGA compression of 80 or less, nor does Yamagishi et al. provide any suggestion or teaching to make a golf ball with the PGA compression of Appellant's golf balls. Appellant respectfully submits that core deflection measured in Yamagishi cannot be converted in the manner suggested by the Examiner. Appellant respectfully submits that Yamagishi does not provide the specific details to even compare the deflection against Appellant's PGA range. Appellant respectfully submits that the correlation between the two would not be a linear relationship, as



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suggested by the Examiner. In order to compare the two measurements, Yamagishi would have to disclose other factors for performing the measurement, such as, for example, preload, total load, and loading rate and/or speed at which the load is being applied. Appellant additionally respectfully submits that 100 kg (which converts to approximately 220 pounds) is not "close enough" to 200 pounds since 220 pounds is 10% more than Appellant's load. Additionally, as previously stated, there is no linear relationship between the two tests.

Yamagishi also discloses a golf ball wherein the outer cover layer has a higher specific gravity than the core and inner cover layer, and the ball has an inertia moment within a certain range.

Appellant respectfully submits that one skilled in the art would not be motivated to modify the golf ball of Yamagishi in the manner suggested by the Examiner. Appellant respectfully submits that the burden is on the Examiner to provide a basis in fact and/or technical reason to reasonably support the determination that the allegedly inherent or obvious characteristics necessarily flow from the teachings of the prior art. Inherency must be a necessary result and not merely a possible result. Appellant respectfully submits that the Examiner has failed to support the inherency determination with any facts or technical reasoning. The Examiner has no technical support or reasoning for the argument that the deflection of Yamagishi's core can be converted to a compression and compared to that of Appellant's cores.

The Examiner's cited reference neither teaches nor anticipates the golf ball of independent claims 38, 47 or 53. Claims 39 to 42, 44 to 46, 48, 49 and 54 to 57, which are dependent or ultimately dependent from claims 38, 47 or 53 and recite additional features, are also not obvious in light of the Examiner's cited reference.

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**IX. CONCLUSION**

In view of the above, Appellant respectfully submits that claims 38 to 42, 44 to 49 and 51 to 57 are not anticipated and are non-obvious and patentable over the cited reference. Accordingly, it is respectfully requested that the Examiner's rejection of claims 38 to 42, 44 to 49 and 51 to 57 be reversed.

Respectfully submitted,

MICHAEL J. SULLIVAN ET AL.

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Date: August 20, 2004

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**APPENDIX A**

The claims standing on appeal are:

38. A golf ball comprising:

a solid core, wherein the core has a PGA compression of 55 or less;

a cover comprising an inner cover layer and an outer cover layer, wherein the inner cover layer comprises an ionomer resin and the outer cover layer comprises a polyurethane and wherein outer cover layer has a Shore D hardness of about 58 or more;

the ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780.

39. The ball according to claim 38, wherein the ball has a PGA compression of 70 or less.

40. The ball according to claim 38, wherein the ball has a diameter of no more than 1.70 inches.

41. The ball according to claim 38, wherein the ball has a coefficient of restitution of at least 0.790.

42. The ball according to claim 38, wherein the ball has an outer cover hardness of 60 or more.

44. The ball according to claim 38, wherein the outer cover has a thickness of 0.01 to 0.20 inches.

45. The ball according to claim 38, wherein the outer cover has a thickness of 0.025 to 0.15 inches.

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46. A golf ball according to claim 38, wherein the ball has a mechanical impedance with a primary minimum value in the frequency range of 3100 Hz or less after the ball has been maintained at 21.1°C, 1 atm. and about 50% relative humidity for at least 15 hours.

47. A golf ball comprising:

a solid polybutadiene core, wherein the core has a PGA compression of 55 or less;

an outer polyurethane cover layer having a Shore D hardness of about 58 or more;

the ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780.

48. The ball according to claim 47, wherein the ball has a coefficient of restitution of at least 0.790.

49. The ball according to claim 47, wherein the ball has a mechanical impedance with a primary minimum value in the frequency range of 3100 Hz or less after the ball has been maintained at 21.1° C, 1 atm and about 50% relative humidity for at least 15 hours.

51. The ball according to claim 47, wherein the outer cover has a thickness of 0.01 to 0.20 inches.

52. The ball according to claim 47, wherein the outer cover has a thickness of 0.025 to 0.15 inches.

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53. A golf ball comprising:

a solid polybutadiene core, wherein the core has a PGA compression of 55 or less;

a cover comprising an inner cover layer and an outer cover layer, wherein the inner cover layer comprises an ionomer resin and the outer cover layer comprises a polyurethane and wherein outer cover layer has a Shore D hardness of about 58 or more;

the ball having a PGA compression of 80 or less and a coefficient of restitution of at least 0.780.

54. The ball according to claim 53, wherein the ball has a PGA compression of 70 or less.

55. The ball according to claim 53, wherein the ball has a diameter of no more than 1.70 inches.

56. The ball according to claim 53, wherein the ball has a coefficient of restitution of at least 0.790.

57. A golf ball according to claim 53, wherein the ball has a mechanical impedance with a primary minimum value in the frequency range of 3100 Hz or less after the ball has been maintained at 21.1°C, 1 atm. and about 50% relative humidity for at least 15 hours.